

4.3.4.1.5 *Geology and Soils*

This section describes the environmental impacts to the geologic and soil resource as related to the construction and operation of the vitrification facility. This facility at any of the alternative sites, would involve some ground-disturbing construction activities (24 ha [60 acres]) that would affect the soil erosion potential. The key factors affecting soil erosion potential are the amount of land disturbed and climate. The relative amount of annual precipitation (rain) is greater at ORR and SRS than Pantex, Hanford, INEL, and NTS. Combining these key factors together, the relative soil erosion potential for a site can be categorized as slight, moderate, or severe.

No apparent direct or indirect effects on the geologic resource are anticipated. Neither facility construction and operational activities or site infrastructure improvements would restrict access to potential geologic resources.

The soil erosion potential from direct (facility construction) and indirect (site infrastructure improvements) impacts associated with construction and operational activities is low for Pantex, Hanford, INEL, and NTS. The soil erosion potential for ORR and SRS during construction and operational activities is moderate due primarily to greater relative annual precipitation. Soil disturbance would occur primarily from ground-breaking construction activities (foundation preparation) and associated with building construction laydown areas that can expose the soil profile and lead to a possible increase in soil erosion as a result of wind and water action. Soil loss would depend on the frequency and severity of rain, wind velocities (increase wind velocities and durations increase potential soil erosion), and the size, location, and duration of ground-breaking activities with respect to local drainage and wind patterns. Soil loss associated with construction would be less if existing facilities were used for part of the vitrification process.

Operational effects to the soil resource would be minimal assuming typical landscaping and ground cover improvements were employed. Net soil disturbance during operation would be considerably less than that during construction, because areas previously without ground cover would have some type of improvement (buildings, roads, and landscaping). Although erosion from stormwater runoff and wind action could occasionally occur during operation, it is anticipated to be minimal. [Text deleted.]